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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,577	02/12/2002	Ji-Young Jang	A-0010US	9888

7590 05/23/2003

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EXAMINER

MANOHARAN, VIRGINIA

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 05/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/075,577

Applicant(s)

JANG ET AL.

Examiner

Virginia Manoharan

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1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).<sup>1</sup>
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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Applicant's election without traverse of Group II, claims 14-22 in Paper No. 6 is acknowledged.

Figures 1-3 and Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. [Compare with page 8 of the specification under the heading "BRIEF DESCRIPTION OF THE DRAWINGS"].

The abstract of the disclosure is objected to because of the inclusion of legal phraseology often used in patent claims such as "Disclosed" in line 1. Correction is required. See MPEP § 608.01(b).

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors, e.g., typographical, grammar, idiomatic, syntax and etc. Applicants' cooperations are requested in correcting any errors of which applicants may become aware in the specification.

Claims 14-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The steps of "entraining the vapor" and "condensing the vapor stream to separate acetic acid from water," in claim 14 provide for ambiguity and confusion. The step of condensing is normally seen as a mere heat-exchanging process wherein the

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overhead vapor stream is changed into a condensate or distillate. A changed from a vapor phase to a liquid phase such that it is not seen how a mere condenser is capable of separating the vapor into two different products? Also, what constitute the vapor stream? What component is being entrained and what happen to the entrainer in the process of condensing?

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Disclosure of Admitted Prior Art in view of Othmer et al (2,275,802).

Applicants admit at page 11, second through the fourth paragraphs that "...Fig. 2 illustrates a typical flow diagram using a conventional distillation method for acetic acid dehydration in the dehydration section of the terephthalic acid production plant. The conventional distillation system incorporates a steam generator to recover some steam for reuse..... Dehydration column 200 typically includes trays 290 and a reboiler 202. Water streams 281 containing acetic acid solvent 282 and a small amount of organic by-product 283, methyl acetate, are fed to the dehydration column 200 which typically consists of 70-90 distillation trays 290. Acetic acid 292, typically at 92-95 wt% concentrations, is recovered from the bottom of the dehydration column 200 and returned to the reaction section.....

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... Overhead condenser 220 produces low-pressure steam 291 during condensation to recover some energy to be recycled into the plant for various uses. Typically, a conventional dehydration column generates low-pressure steam (typically 0.6 0.7 kg/cm<sup>2</sup>g) at the top of the column. "

Moreover, applicants admit at page 12, third full paragraph, that

"... Fig. 3 illustrates a typical flow diagram using prior art azeotropic distillation with entrainers such as isobutyl acetate (IBA) or normal butyl acetate (NBA) in the dehydration section of a typical terephthalic acid plant..." [ Above Underlinings Supplied].

The process admitted to be "conventional" or "typical" by applicants differ from the claimed invention in that claim 1, for example, recites "entraining the vapor"

However, the above limitation is an obvious expediency in the art as taught by Othmer et al. See e.g., page 3, lines 61-63; and the claims at pages 4-5. It would have been obvious to one of ordinary skill in the art, at the time of the invention was made, to incorporate the limitation taught by Othmer et al to the process admitted to be known by applicants so as to obtain the advantages suggested by Othmer at page 3, lines 5-14. The pressures recited in claims 19-22 are deemed to be result effective- variables, which ordinarily are within the skilled of the art. This is recognized by applicants as discussed, supra.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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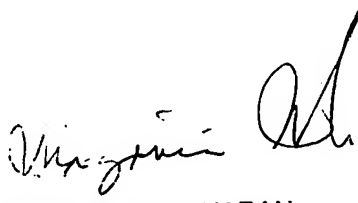
- a. Gordon et al discloses the process for distillation of aliphatic acids with butyl acetate as entraining agents.
- b. Parten et al discloses a process of dehydration of acetic acid by azeotropic distillation.
- c. Guinot and Dreyfuss discloses the treatment of acetic acid.
- d. Coutor discloses a process for concentrating acetic acid.

Any inquiry concerning this communication from the examiner should be directed to V. Manoharan whose telephone number is (703) 308-3844. The examiner can generally be reached on Tuesday--Friday from 7:30 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mrs. Marian Knode can be reached on (703) 308-4311. The fax phone numbers for the organization where this application is assigned are (703) 872-9311 for regular communications and (703) 308-0651 for After Final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0661.

V. Manoharan/dh  
May 16, 2003

  
VIRGINIA MANOHARAN  
PRIMARY EXAMINER  
ART UNIT 133/764  
5/22/03